What is claimed is:

1. A method for fabricating an electrospray ionization microelectromechanical device, comprising the steps of:

a) providing a silicon substrate having a first surface and an opposing second surface;

b) forming a first silicon oxide layer on one of said first surface and said second surface of said substrate;

c) doping a portion of said silicon substrate through said first silicon oxide layer with a dopant of a same conductivity type as a conductivity type of said substrate;

d) forming a silicon nitride film on said first silicon oxide layer;

e) patterning and etching said silicon nitride film to form at least one silicon nitride contact area on said first silicon oxide layer;

f) oxidizing said substrate, after step (e), to increase said first silicon oxide layer;

g) coating a first photoresist layer on said first silicon oxide layer;

h) defining a first pattern on said first photoresist layer, said pattern consisting of a nozzle channel;

i) transferring said first pattern onto said first silicon oxide layer;

j) etching said first pattern into said silicon substrate for a first period of time;

k) removing said first photoresist layer;

l) forming a second silicon oxide layer on the surface opposing said one of said first surface and said second surface, and coating a second photoresist layer on said second silicon oxide layer;

m) defining a second pattern on said second photoresist layer, said second pattern consisting of a nozzle orifice, said second pattern being aligned on said second photoresist layer such that said nozzle orifice and said nozzle channel are substantially axially aligned;

n) transferring said second pattern into said second silicon oxide layer;

o) removing said second photoresist layer;

p) coating a third photoresist layer on said second silicon oxide layer;

q) defining a third pattern in said third photoresist layer, said third pattern consisting of a recessed region and a portion corresponding to said nozzle orifice, wherein said second pattern is not occluded by said third photoresist layer;

r) etching, after the step of defining said third pattern, said second pattern into said silicon substrate for a second period of time;

s) transferring said third pattern into said second silicon oxide layer;

t) etching simultaneously, after the step of transferring said third pattern, said second and third patterns into said silicon substrate for a third period of time;

u) forming, after step (t), an isolation layer on at least all silicon surfaces of said nozzle channel;

v) removing, after step (u), said silicon nitride from said at least one silicon nitride contact area and removing any of said first silicon oxide layer beneath said at least one silicon nitride contact area, thereby forming at least one contact area on said first surface; and

w) depositing a metal on said at least one contact area.

2. A method according to claim 1, wherein said etching in at least one of steps (e), (j), and (r) is performed by dry etching.

3. A method according to claim 1, wherein said step of removing said silicon nitride is performed by wet etching in hot phosphoric acid.

4. A method according to claim 1, wherein said step of removing said silicon nitride and said pad oxide is performed as an unmasked etch by reactive ion etching.

5. A method according to claim 1, further comprising shadow masking, before step (v), said at least one silicon nitride contact area and wherein said step of removing said silicon oxide and said oxide is performed by reactive ion etching.

6. A method according to claim 1, wherein step (c) is performed before step (d).

7. A method according to claim 1, wherein step (c) is performed after step (v) and before step (w).